

## Message Text

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TAGS: TECH, UR

SUBJECT: SOVIETS MAKE QUANTUM JUMP IN COMPUTER TECHNOLOGY

1. RECENTLY SCICOUNS, ACCOMPANIED BY ALEX RUSKEVICH, IBM'S PARIS REPRESENTATIVE, MADE QUICK TOUR OF SOVIET SECTION OF INTERORGTEKHNIKA-75. UNEXPECTED SOVIET DEVELOPMENT IS SIGNIFICANT ADVANCE IN SOVIET COMPUTER TECHNOLOGY REPRESENTED BY THE DESIGN AND WORKMANSHIP OF THE M-4030 COMPUTER HARDWARE, THE SOPHISTICANTION AND IBM 360 COMPATIBILITY OF ITS SOFTWARE AND THE COMPETENCE OF THE ENGINEERING STAFF CAPABLE OF EXPLAINING AND REPEATEDLY DEMONSTRATING ARBITRARILY CALLED FOR FUNCTIONS.

2. DEVELOPED INDEPENDENTLY OF PREDECESSOR MACHINES (URAL, RYAD) BY A DIFFERENT MINISTRY, THE 4030 IS OSTENSIBLY CLAIMED TO BE A SPECIAL PURPOSE AUTOMATIC PROCESS CONTROL SYSTEM BUT IN FACT IS A WELL THOUGHTOUT GP MACHINE WITH MANY SPECIALIZED PERIPHERALS. THE M-4030 CONTAINS (1) A PROCESSOR CAPABLE OF OPERATING IN MULTIPLEX (50,000 BYTES) OR SELECTOR MODE (140,000 BYTES) ON FOUR CHANNELS, HAVING A TOTAL CHANNEL CAPACITY OF 2 MILLION BYTES AND MAXIMUM DATA TRANSMISSION SPEED IN EACH SELECTOR CHANNEL OF ONE MILLION BYTES; (2) CONTROL CONSOL EQUIPPED WITH TYPEWRITER AND A HIGH QUALITY CRT DISPLAY; (C) MAIN MEMORY WITH A CAPACITY OF 128-512 KBYTES AND A CYCLE TIME OF 2 MICROSECONDS; (4) A FAST (650 NANOSECOND CYCLE TIME) MEMORY LIMITED OFFICIAL USE

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WITH A CAPACITY OF 384 WORDS, WHOSE LENGTH IS 36 BITS; (5)

AUXILIARY MAGNETIC DISK, MAGNETIC DRUM AND MAGNETIC TAPE MEMORIES; (6) ALPHANUMERIC PRINTER; (7) GRAPHIC RECORDER AND (8) A LARGE NUMBER OF SPECIALIZED PERIPHERALS AND DATA EDITING DEVICES.

3. THE M-4030 COMES WITH A LOT OF SOFTWARE INCLUDING A NUMBER OF OPERATIONAL SYSTEMS, OVER HALF A DOZEN LANGUAGE TRANSLATORS, SERVICE PROGRAMS, A LIBRARY OF STANDARD PROGRAMS AND TEST SYSTEMS.

4. DESIGN IS BASED ON MICROPROGRAMMING PRINCIPLES WHICH ARE IMPLEMENTED USING, AMONG OTHERS, PC BOARDS DESIGNED INTERACTIVELY BY THE MACHINE ITSELF. THE PROGRAM AND MICROPROGRAM CAN DETECT AND ANALYZE ERRORS AND FAULTS.

5. MORE DETAILED INFORMATION ON SOME OF THE ABOVE SUBSYSTEMS CAN BE SUPPLIED IF DESIRED.

6. THE EXHIBITORS TO WHOM SCICOUNS WAS INTRODUCED BY RUSKEVICH WERE VERY HELPFUL AND FORTHRIGHT IN ANSWERING QUESTIONS AND OPENING UP THE EQUIPMENT FOR INTERNAL VISUAL EXAMINATION. THE WORKMANSHIP OF THE PROCESSOR AND MEMORY UNITS DID NOT BEAR THE USUAL EARMARKS OF SLOPPINESS AND AWKWARDNESS OF SOVIET MANUFACTURE.

7. THE M-4030 IS DESIGNED AND MANUFACTURED BY THE MINISTRY OF INSTRUMENT MAKING, AUTOMATION AND EQUIPMENT CONTROL SYSTEM AND UNDER COMPLETELY DIFFERENT MANAGEMENT THAN PREVIOUS SOVIET COMPUTERS. THERE ARE PLANS TO BUILD UP WESTERN-STYLE SERVICE ORGANIZATIONS TO KEEP UP AND REPAIR THE INSTALLED UNITS. SEVERAL SYSTEMS OF M-4030'S WERE DISPLAYED AND THE SOVIETS CLAIM THAT THEY ARE IN MASS AND NOT IN PILOT PRODUCTION.

8. INDEPENDENT INPUTS INDICATE THAT MANY PROBLEMS STILL REMAIN TO BE WORKED OUT BY THE SOVIETS. ACCORDING TO SOVIET WORKERS THE DOCUMENTATION OF 4030 MACHINES IS INCOMPLETE AND SERVICE IS INADEQUATE, ESPECIALLY WHEN COMPARED WITH THAT PROVIDED BY WESTERN MANUFACTURERS.

9. M-4030 SYSTEMS HAVE BEEN ALTERNATELY CHARACTERIZED AS A COPY LIMITED OFFICIAL USE

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OF (A) RCA'S SPECTRA 70; (B) AM IBM 360 MACHINE MODIFIED TO PERMIT SIEMENS PROGRAMMING; (C) A MODIFICATION WITH A NUMBER OF SIGNIFICANT IMPROVEMENTS OVER THE IBM 360 STATE OF ART.

10. WHILE THE SOVIETS HAVE STILL A LONG WAY TO GO TO APPROACH WESTERN LEVEL COMPUTER TECHNOLOGY THERE CAN BE LITTLE DOUBT THAT THE APPEARANCE OF THE MASS PRODUCED, WELL DESIGNED M-4030 SYSTEM, AND THE ENTRY OF A NEW CAPABLE COMPUTER MANUFACTURER ON THE

SOVIET SCENE HAS SIGNIFICANTLY ALTERED THE SITUATION. REEXAM-  
INATION OF SOVIET COMPUTER CAPABILITIES IN LIGHT OF ABOVE  
DEVELOPMENS COULD LEAD TO MORE GENERAL REASSESSMENT OF SOVIET  
CAPABILITIES IN THE COMPUTER FIELD.  
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